

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of  
**Firebaugh et al.**

Serial No.: **10/809,133**

Filed: **March 25, 2004**

For: **Accessibility Synopsis Containers for  
Large Data Sets**

Attorney's Docket No: **4541-017**

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**APPEAL BRIEF**

**(I.) REAL PARTY IN INTEREST**

The real party in interest is International Business Machines Corporation.

**(II.) RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences.

**(III.) STATUS OF CLAIMS**

Claims 1-16 are pending. Claims 1-16 stand rejected.

#### **(IV.) STATUS OF AMENDMENTS**

All amendments have been entered.

#### **(V.) SUMMARY OF CLAIMED SUBJECT MATTER**

Physical disabilities interfere with individuals' ability to utilize computers, and various accessibility systems are known in the art. Screen readers assist sight-impaired individuals by converting text displayed on a computer's screen to audible speech. Screen readers allow many visually impaired individuals to utilize a computer for a variety of tasks, including accessing websites from the Internet. However, a screen reader is of little help when a web page contains large amounts of data, such as data in a table. Sighted individuals typically scan such tables; this is not possible in the case of a screen reader, which can only convert the entire data set to an audible format. According to embodiments of the present invention, a web site displaying large amounts of data can use markup language (*e.g.*, HTML) code to encapsulate the data set, and provide a synopsis of the data set. A screen reader may then recognize the code, and render the synopsis into audible speech rather than the data.

Claim 1 is directed to a method of synopsizing large data sets to facilitate the use of an accessibility system. A large data set is provided and formatted in a markup language data structure. ¶¶ 0019-0020. A synopsis of the large data set is generated. ¶ 0021. The synopsis of the large data set is formatted in a synopsis container that includes the large data set and the synopsis of the large data set. ¶ 0021, Fig. 4. The synopsis container is transmitted to a computer having an accessibility system, and the synopsis container is operative to cause the accessibility system to output the synopsis of the large data set. ¶¶ 0022-0023, Fig. 5. *See also*, Fig. 6 and ¶¶ 0024-0026.

Claim 10 is directed to a computer-readable medium containing programs operative to generate the markup language code of claim 1. ¶ 0016, Fig. 6 and ¶¶ 0024-0026.

Claim 15 is directed to a computer-readable medium containing programs operative to implement the method of claim 1. ¶ 0016, ¶¶ 0019-0023.

#### **(VI.) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Whether claims 12-13 are indefinite under 35 U.S.C. § 112, second paragraph?

Whether claims 1-16 recite patentable subject matter under 35 U.S.C. § 101?

Whether claims 1-8 and 10-15 are unpatentable over U.S. Patent No. 6,643,629 to Ramaswamy *et al.* (“Ramaswamy”) in view of U.S. Patent No. 6,470,381 to De Boer *et al.* (“De Boer”) and further in view of U.S. Patent No. 6,876,972 to Kameda (“Kameda”)?

#### **(VII.) ARGUMENT**

##### The 35 U.S.C. § 112 Rejections

The Examiner rejected claims 12-13 under 35 U.S.C. § 112, second paragraph, asserting that “applicant is claiming a data type definition statement.” Claim 12 recites:

The computer readable medium of claim 10, wherein the computer programs are further operative to cause a computer to perform the step of associating the markup language data structure with the keyword CONTAINER.

Claim 12 does nothing more than claim a particular term for a markup language tag.

As well known in the art, and as described at ¶¶ 004-005, with reference to Figs. 2 and 3, HTML includes certain defined keywords, or tags. Standard HTML interpreters, such as web browsers, identify the tags and handle the associated text in a predetermined manner. For example, a browser encountering the construct, <BOLD> [text] </BOLD> will render the intervening text in a bold-face font.

HTML is an extensible language. That is, it can be expanded, or added to. Anyone may include any tag, for example, <ABC123> [text] </ABC123>, in an HTML document such as a web page. A browser that recognizes the ABC123 tag will then render the intervening text in

whatever manner is defined for it. A browser that does not recognize the ABC123 tag will simply ignore it, and render the intervening text normally.

Claim 10 recites formatting a large data set as a markup language data structure. Claim 12 recites that the associated markup language tag is the word CONTAINER. Claim 12 merely names a data structure, it is not a data type definition statement.

Claim 10 further recites “generating a markup language data structure initial tag,” and “generating a markup language data structure terminating tag.” Claim 13 recites that the initial tag is <CONTAINER> and the terminating tag is </CONTAINER>. Claim 13 merely supplies a particular label to previously claimed markup language data structure elements, it is not a data type definition statement.

The Examiner has not articulated any reasoning or explanation behind the rejections other than the conclusory statement that they are data type definition statements. The rejection is under 35 U.S.C. § 112, second paragraph, which states, “The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” There is nothing indefinite about claims 12 or 13. Each claim particularly points out and distinctly claims the subject matter that Applicants regard as their invention. The § 112 rejections are therefore improper and must be overturned.

#### The 35 U.S.C. § 101 Rejections

The Examiner rejected claims 1-16 under 35 U.S.C. § 101 as being directed to a computer program *per se*. In particular, the Examiner stated, “Independent claims 1, 10, 15 are claiming a computer program *per se* and nonfunctional descriptive material consisting of data structures and computer programs, which impart functionality when employed as a computer component.” (Emphasis added). This description is the definition of functional descriptive

material, not nonfunctional. “Nonfunctional descriptive material” includes but is not limited to music, literary works, and a compilation or mere arrangement of data.” MPEP § 2106.01.

Both types of ‘descriptive material’ [that is, both functional and nonfunctional] are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized.

*Id.* (emphasis added). “Only when the claimed invention taken as a whole is directed to a mere program listing, *i.e.*, to only its description or expression, is it descriptive material *per se* and hence nonstatutory.” MPEP § 2106.01 I (emphasis added).

None of claims 1, 10, or 15 recite “a mere program listing.” Claim 1 is directed to a method of synthesizing large data sets to facilitate the use of an accessibility system, and recites functional method steps. Claim 10 is directed to a computer readable medium including one or more computer programs operative to cause a computer to perform the steps of generating and formatting data in a specific manner, and outputting the data formatted as a markup language data structure. Claim 15 is directed to a computer readable medium including one or more computer programs operative to cause a computer to perform the functional method steps recited in claim 1.

Another test for § 101 subject matter eligibility of inventions implemented in software is that a claim is statutory if a practical application of the claimed subject matter produces a useful, concrete, and tangible result.

[T]he examiner shall review the claim to determine if the claim provides a practical application that produces a useful, tangible and concrete result. In determining whether the claim is for a “practical application,” the focus is not on whether the steps taken to achieve a particular result are useful, tangible and concrete, but rather that the final result achieved by the claimed invention is “useful, tangible and concrete.”

Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility

IV.C.2.b. (2005). Claims 1 and 15 recite, “transmitting said synopsis container to a computer

having an accessibility system, the synopsis container operative to cause the accessibility system to output the synopsis of said large data set.” Claim 10 recites, “outputting data formatted as a markup language data structure, the data synopsisizing the large data set and operative to cause a computer having an accessibility system to output the synopsis of said large data set.” The final result achieved by the inventions of claims 1, 10, and 15 is useful, concrete, and tangible: data formatted as a data structure operative to cause a computer having an accessibility system to output a synopsis of a large data set, in lieu of or in addition to the large data set itself. As described in the specification, such a data structure and its operation in computers that recognize it – those having an accessibility system such as a screen reader – provides the useful result of summarizing a large data set for, *e.g.*, visually impaired persons.

The Examiner cited to *In Re Comiskey*, 499 F.3d 1365 (Fed. Cir. 2007). That case is inapposite. First, the court notes, “claims 1 and 32 do not reference, and the parties agree that these claims do not require, the use of a mechanical device such as a computer.” *Id.*, at 1369. The court then concludes:

Comiskey's independent claims 1 and 32 claim the mental process of resolving a legal dispute between two parties by the decision of a human arbitrator. They . . . claim the use of mental processes to resolve a legal dispute. Thus, like the claims that the Supreme Court found unpatentable in Benson and Flook and the claims found unpatentable in our own cases, Comiskey's independent claims 1 and 32 seek to patent the use of human intelligence in and of itself. Like the efforts to patent “a novel way of conducting auctions” which Schrader found to be directed to an abstract idea itself rather than a statutory category, Comiskey's independent claims 1 and 32 describe an allegedly novel way of requiring and conducting arbitration and are unpatentable.

*Id.*, at 1379. There can be no serious contention that claims 1, 10, or 15 attempt to claim a purely mental process or “the use of human intelligence in and of itself.” Claims 10 and 15 are expressly directed to a computer-readable medium, and thus have utility only in conjunction with a computer. Claim 1 recites generating a synopsis container, and “transmitting said synopsis

container to a computer having an accessibility system.” Applicants’ claims are thus necessarily tied to a computer, and *In Re Comiskey* is inapposite.

For at least the reasons discussed above, the § 101 rejections of claims 1-16 are improper and must be withdrawn.

#### The 35 U.S.C. § 103 Rejections

##### Ramaswamy does not teach generating a synopsis of a large data set.

The Examiner maintains that Ramaswamy teaches generating a synopsis of a large data set. Ramaswamy discloses a method for identifying "outliers" in large data sets. Outliers are particular data points in a data set that are dissimilar from the remaining points in the set. col. 1, lines 12-13. For example, outliers in the form of abnormal usage patterns for a credit card, in a data set comprising normal transactions using the card, may be used to detect a stolen card. col. 1, lines 17-18. Ramaswamy ranks outliers in relation to their neighboring points, and employs a partition-based detection algorithm to partition the data set. The partitions that cannot contain a predetermined number of outliers of interest are eliminated from consideration, reducing the complexity of the computationally intensive task of identifying outliers. col. 1, lines 39-54.

“Outliers,” as Ramaswamy defines the term, is the opposite of a synopsis of a data set – it is a collection of anomalous data points. “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (*en banc*). The ordinary and customary meaning of a term may be evidenced by a variety of sources, including “the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence

concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” *Phillips v. AWH Corp.*, 415 F.3d at 1314.

A synopsis is described at ¶ 0019, “The synopsis container additionally contains a summary or synopsis of the large data set.” A synopsis is “A brief outline or general view, as of a subject or written work; an abstract or a summary.” The American Heritage® Dictionary of the English Language, Fourth Edition. Houghton Mifflin Company, 2004 (<http://www.answers.com/topic/synopsis>, last visited August 26, 2008). A summary is “A presentation of the substance of a body of material in a condensed form or by reducing it to its main points,” The American Heritage® Dictionary of the English Language, Fourth Edition. Houghton Mifflin Company, 2004 (<http://www.answers.com/topic/summary>, last visited August 26, 2008). Ramaswamy defines outliers as “data points in a data set that are dissimilar from the remaining points in the set.” col. 1, lines 11-12. A collection of dissimilar points is not a “brief outline or general view” of what a subject is – it is a summary of what it is not. A collection of dissimilar points is not “the substance of a body of material . . . by reducing it to its main points.” Main points and dissimilar points are not synonymous; they are opposites. No one of skill in the art would equate a synopsis or summary of a large data set to a collection of outlier points. For at least the reason that Ramaswamy fails to teach or suggest generating a synopsis of a large data set, the § 103 rejections are improper and must be overturned.

The Examiner has repeatedly stated, “a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art.” Claim 1 recites, “generating a synopsis of said large data set” and “formatting said synopsis of said large data set in a synopsis container that includes said large data set and said synopsis of said large data set.” Nothing in claim 1 is an “intended use” of the claimed invention. The method steps of generating a synopsis, and formatting the synopsis in a synopsis container that includes the



data set and the synopsis, are limitations of the claim which must be taught or suggested by the prior art to establish a *prima facie* case of obviousness. They are not intended uses of the claimed invention. Ramaswamy does not teach or suggest generating a synopsis of a large data set, or formatting the synopsis in a synopsis container that includes the large data set and the synopsis thereof. Accordingly, the § 103 rejections are improper and must be overturned.

De Boor does not teach the claimed limitations for which it is cited.

De Boor does not teach or suggest any claimed limitation for which it is cited. De Boor discloses a wireless communication device having a user interface comprising a browser interpreting HTML and extensions to HTML. The interface allows a user to access the Internet and World Wide Web, as well as telecommunications functions such as dialing, text messaging, and the like.

The Examiner asserted that De Boor teaches formatting a large data set into a markup language data structure, citing to Figs. 1 and 7, and col. 17, lines 14-15. Figure 1 depicts an architecture diagram, with the wireless communication device hardware at the bottom, and a stack of software layers above it. The only thing in Fig. 1 remotely related to a markup language is the browser 107, which those of skill in the art know to be capable of reading and rendering markup language documents. Fig. 1 discloses no large data set and no markup language data structure. Figure 7 depicts a markup language data structure – the HTML code mapping keys on a key menu to their labels and associated actions. “FIG. 7 illustrates example of the HTMLp source code for page with a key menu defined, and the screen display 136 when the menu is selected to be displayed.” col. 22, lines 34-36. Nothing in the key menu code formats any large data set into a markup language data structure. Finally, col. 17, lines 14-15 states, “Formatted text messages, whether received or created by the user, are assigned the lowest privilege level.” Formatted text messages are not a large data set formatted into a markup language data

structure. For at least the reason that De Boor fails to teach or suggest formatting a large data set into a markup language data structure, the § 103 rejections are improper and must be overturned.

The Examiner asserted De Boor teaches formatting the synopsis of the large data set in a synopsis container that includes the large data set and the synopsis of the large data set, citing to Fig. 1 and the previously cited text passage. Neither teaches or suggests anything remotely related to the claimed limitation. For at least the additional reason that De Boor fails to teach or suggest formatting the synopsis of the large data set in a synopsis container that includes the large data set and the synopsis of the large data set, the § 103 rejections are improper and must be overturned.

The Examiner asserted De Boor teaches transmitting the synopsis container to a computer having an accessibility system, citing to col. 30, lines 18-21. The cited passage relates to the problem of displaying an HTML form having many input fields on the small screen of a cellphone. Nothing anywhere near the cited passage – or anywhere else in De Boor – teaches or suggests an accessibility system, such as a screen reader. For at least the further reason that De Boor fails to teach or suggest transmitting the synopsis container to a computer having an accessibility system, the § 103 rejections are improper and must be overturned.

De Boor does not remotely teach or suggest any claimed limitation for which it was cited. The Examiner admits as much in the Final Office Action, p. 11, ¶ d) “Examiner respectfully disagrees partly, because De Boor does not explicitly teach the screen reader and however, Slotznick teaches screen reader at Page 2, paragraph [0018].” Applicants find this assertion odd, as Slotznick forms no part of any rejection. All § 103 rejections in the Final Office Action are based on the combination of Ramaswamy, De Boor, and Kameda. In any event, De Boor is inapposite to the claimed invention.

Regarding De Boor's relevance, the Examiner stated, "the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious." Final Office Action, p. 11, ¶ d), second paragraph. This statement makes no sense. The Examiner has not identified any alleged advantage – presumably one or more claimed limitations – that would flow naturally from following any suggestion of De Boor. De Boor does not teach or suggest formatting a synopsis of a large data set along with the data set itself into a synopsis container data structure. De Boor does not teach or suggest any computer having an accessibility system such as a screen reader, and it does not teach or suggest transmitting the synopsis container to such a computer.

Kameda does not disclose outputting a synopsis of a large data set.

The Examiner cited to Figs. 1, 2, 6, 9, and col. 35, lines 54-57 in support of the assertion that Kameda teaches outputting a synopsis of a large data set. Fig. 1 is a computer system block diagram. Fig. 2 is a table displaying a patient's medical care data. Fig. 6 is a diagram of the logical structure of object files. Fig. 9 is a flowchart for displaying a medical care data table. Col. 35, lines 54-57, states, "For example, if the size of the cell 10a or the width of the date field is set small, the main display data is generated to display only the predetermined number of the head portion or the initial of the medical care data." Displaying only the head or initial portion of a data set is not outputting a synopsis of a large data set. In general, the initial portion of a data set is not a synopsis of the entire data set (although, of course, individual data sets could be constructed that way). In any event, nothing in this passage discloses outputting a large data set – only data large in comparison to the size of the display cell or window. For at least the reason that Kameda fails to teach or suggest outputting a synopsis of a large data set, the § 103 rejections are improper and must be overturned.

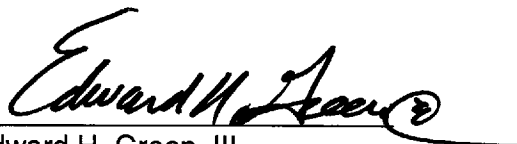
Conclusion

While the prior art references have been discussed herein primarily with respect to the rejection of claim 1, the limitations of claim 15 are fundamentally similar. Furthermore, it is clear that none of the references – separately or in combination – teach or suggest the limitations of claim 10: software that formats a large data set as a markup language data structure and outputs it along with data synopsisizing the large data set.

All dependent claims include all limitations of their respective parent claim(s), and thus also define patentable nonobviousness over the art of record. Accordingly, for the reasons discussed above, all rejections of claims 1-16 must be overturned.

Respectfully submitted,

COATS & BENNETT, P.L.L.C.

A handwritten signature in black ink, reading "Edward H. Green, III", with a stylized flourish at the end.

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**(VIII.) CLAIMS APPENDIX**

1. A method of synthesizing large data sets to facilitate the use of an accessibility system, comprising:

providing a large data set and formatting said large data set in a markup language data structure;

generating a synopsis of said large data set;

formatting said synopsis of said large data set in a synopsis container that includes said large data set and said synopsis of said large data set; and

transmitting said synopsis container to a computer having an accessibility system, the synopsis container operative to cause the accessibility system to output the synopsis of said large data set.

2. The method of claim 1 wherein providing a large data set comprises automatically generating said large data set in response to a user input.

3. The method of claim 1 wherein providing a large data set comprises retrieving said large data set from storage in response to a user input.

4. The method of claim 1 wherein formatting said large data set for transmission comprises generating markup language data structures to direct the display of said large data set at a client terminal.

5. The method of claim 1 wherein generating a synopsis of said large data set comprises automatically generating said synopsis by comparing data elements in said large data set to predetermined metrics.

6. The method of claim 1 wherein generating a synopsis of said large data set comprises writing said synopsis by an individual.
7. The method of claim 1 wherein formatting said synopsis of said large data set in a synopsis container comprises generating a markup language data structure defining said synopsis container.
8. The method of claim 1 wherein transmitting said synopsis container comprises transmitting a markup language data structure including said large data set and said synopsis.
9. The method of claim 1 wherein said accessibility system is a screen reader.
10. A computer readable medium including one or more computer programs operative to cause a computer to perform the steps of:
  - generating a markup language data structure initial tag;
  - generating at least one attribute comprising a synopsis of a large data set;
  - formatting said large data set as a markup language data structure;
  - generating a markup language data structure terminating tag; and
  - outputting data formatted as a markup language data structure, the data synopsizing the large data set and operative to cause a computer having an accessibility system to output the synopsis of said large data set.

11. The computer readable medium of claim 10 wherein the computer programs are further operative to cause a computer to perform the step of generating a flag attribute indicating whether or not a computer having an accessibility system should output said large data set.

12. The computer readable medium of claim 10, wherein the computer programs are further operative to cause a computer to perform the step of associating the markup language data structure with the keyword CONTAINER.

13. The computer readable medium of claim 10 wherein generating a markup language data structure initial tag comprises generating the tag <CONTAINER> and generating a markup language data structure terminating tag comprises generating the tag </CONTAINER>.

14. The computer readable medium of claim 10 wherein outputting data formatted as a markup language data structure synopsisizing the large data set comprises outputting a markup language data structure compatible with the Hyper-Text Markup Language.

15. A computer readable medium including one or more computer programs operative to cause a computer to generate and transmit a synopsis container for a large data set, the computer programs causing the computer to perform the steps of:

formatting said large data set in a markup language data structure;

generating a synopsis of said large data set;

formatting said synopsis of said large data set in a synopsis container that includes said

large data set in said markup language data structure; and

transmitting said synopsis container to a computer having an accessibility system, the synopsis container operative to cause the accessibility system to output the synopsis of said large data set.

16. The computer readable medium of claim 15 wherein said accessibility system comprises a screen reader.

**(IX.) EVIDENCE APPENDIX**

There is no evidence.

**(X.) RELATED PROCEEDINGS APPENDIX**

There are no related proceedings.